

# Maximum Sustainable Yield: A Fiscal Road Map for Alaska

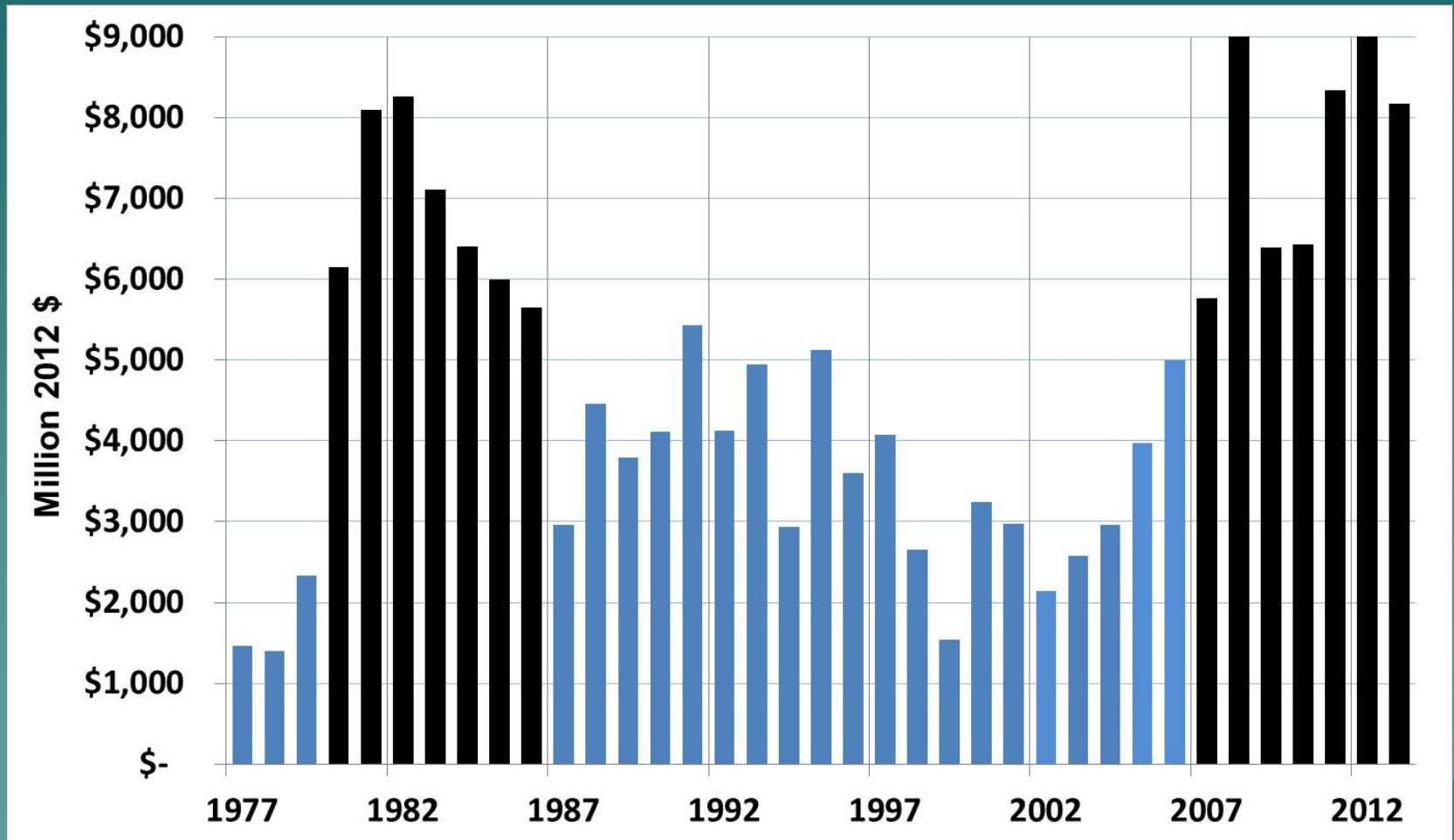
University of Alaska Budget Committee  
Fairbanks, Alaska  
August 8, 2013

Scott Goldsmith  
Institute of Social and Economic Research  
University of Alaska Anchorage

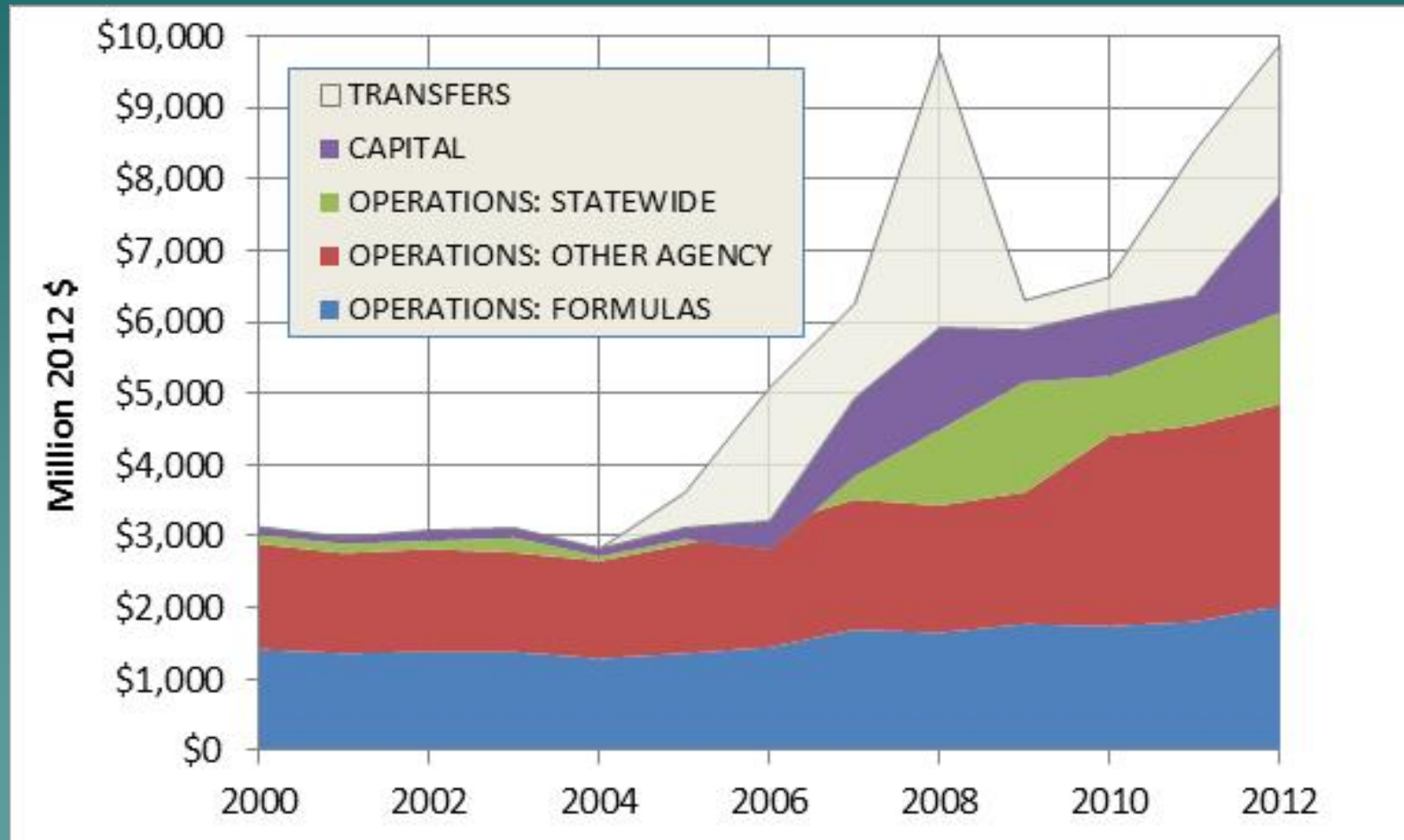
With Generous Financial Support From



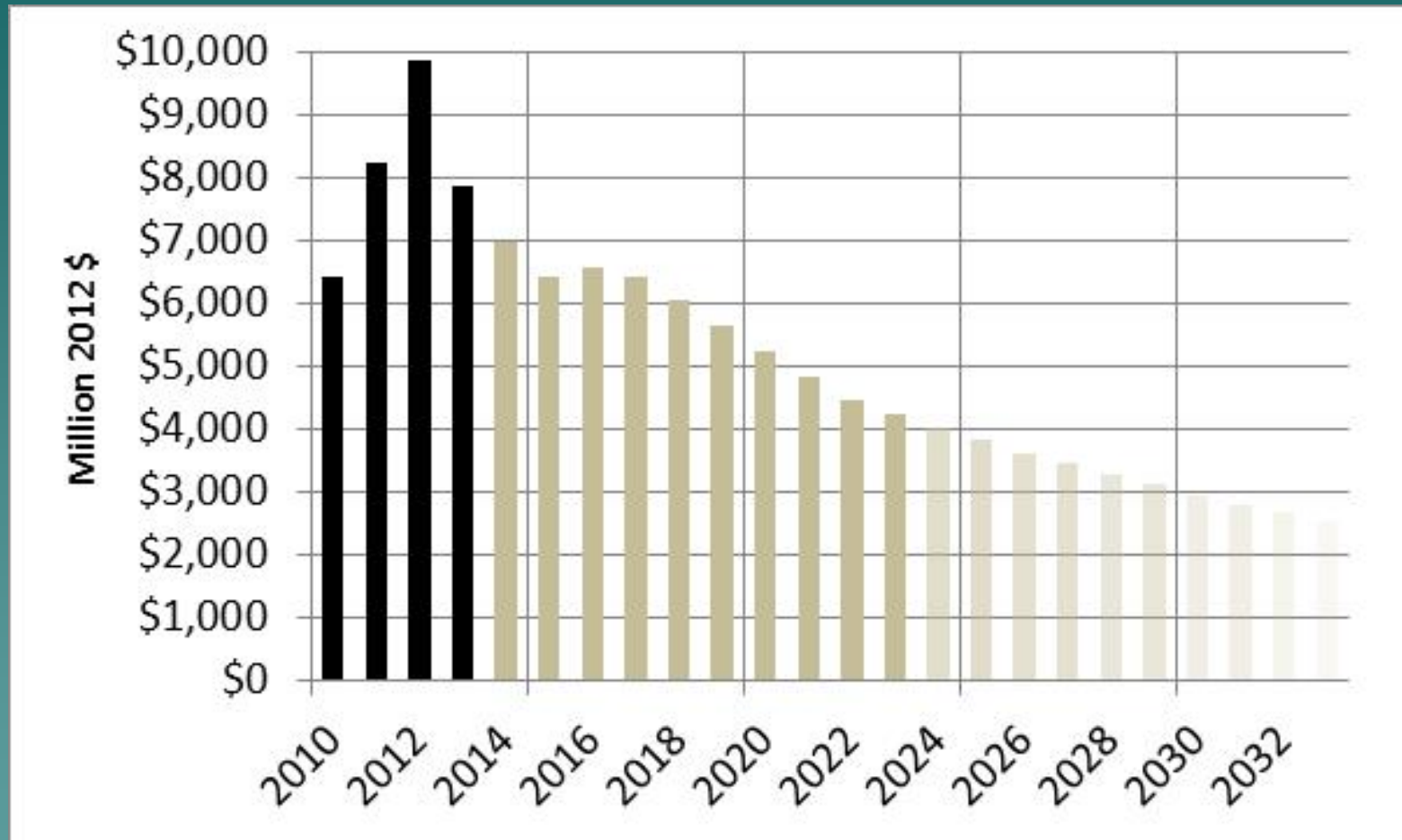
# Alaska Petroleum Revenues: \$183 Billion since 1977



# GF Appropriations Have Grown to Match Higher Revenues

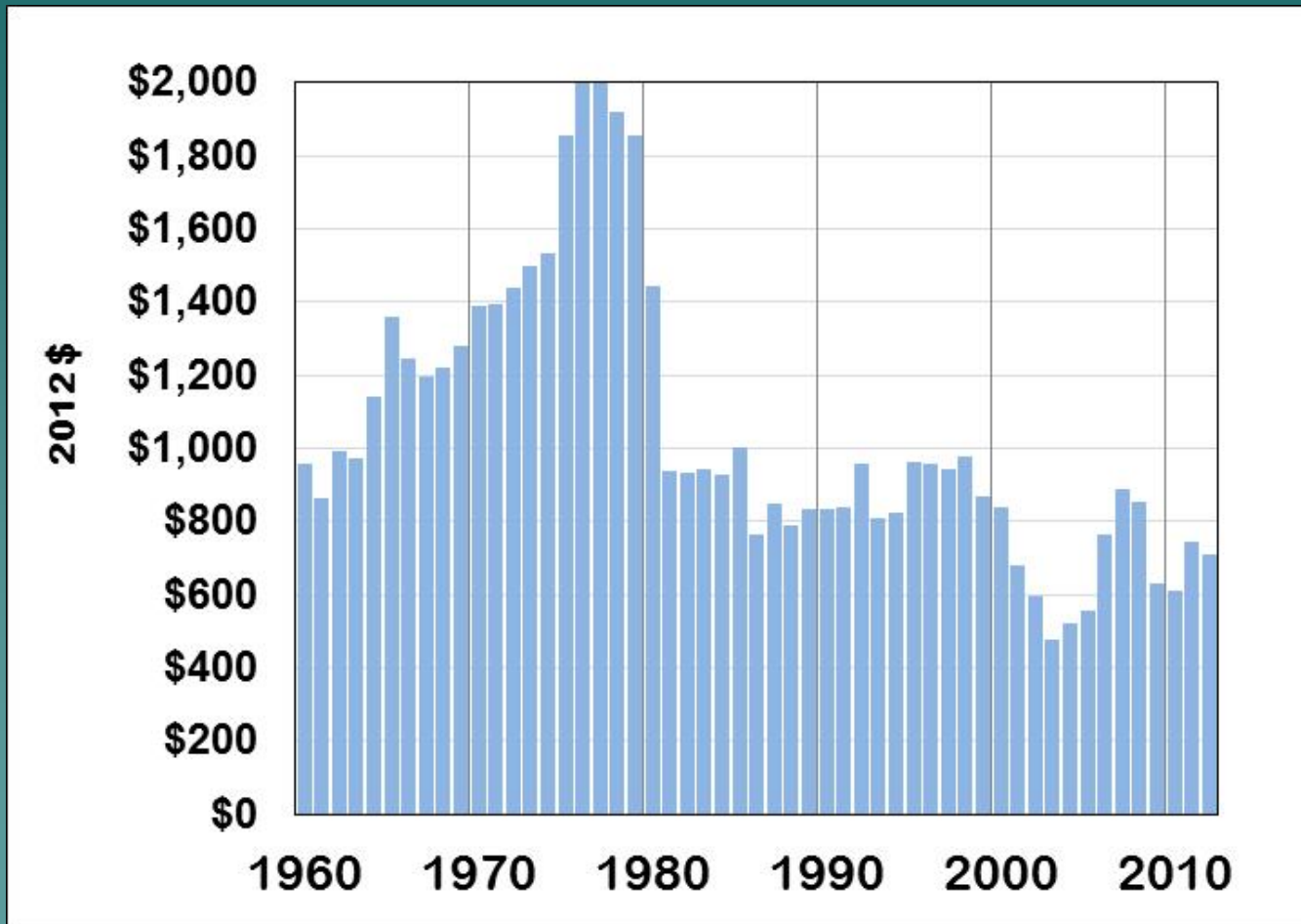


# DOR Projected Petroleum Revenues



Fall 2012 (before SB21) – 5% Real Decline Rate

# Non Petroleum GF Revenues (per capita)



Excludes General Fund earnings

# Non-Petroleum Strategies for the Future?

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- Natural Resource Development
- Value Added Processing
- Economic Diversification
- Infrastructure Investments in Power and Transportation
- Footloose Industry
- Renewable Energy



# Replace \$7.5 Billion in Petroleum Revenue with Taxes on Other Resources?

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\$10,000 /  
OZ. GOLD



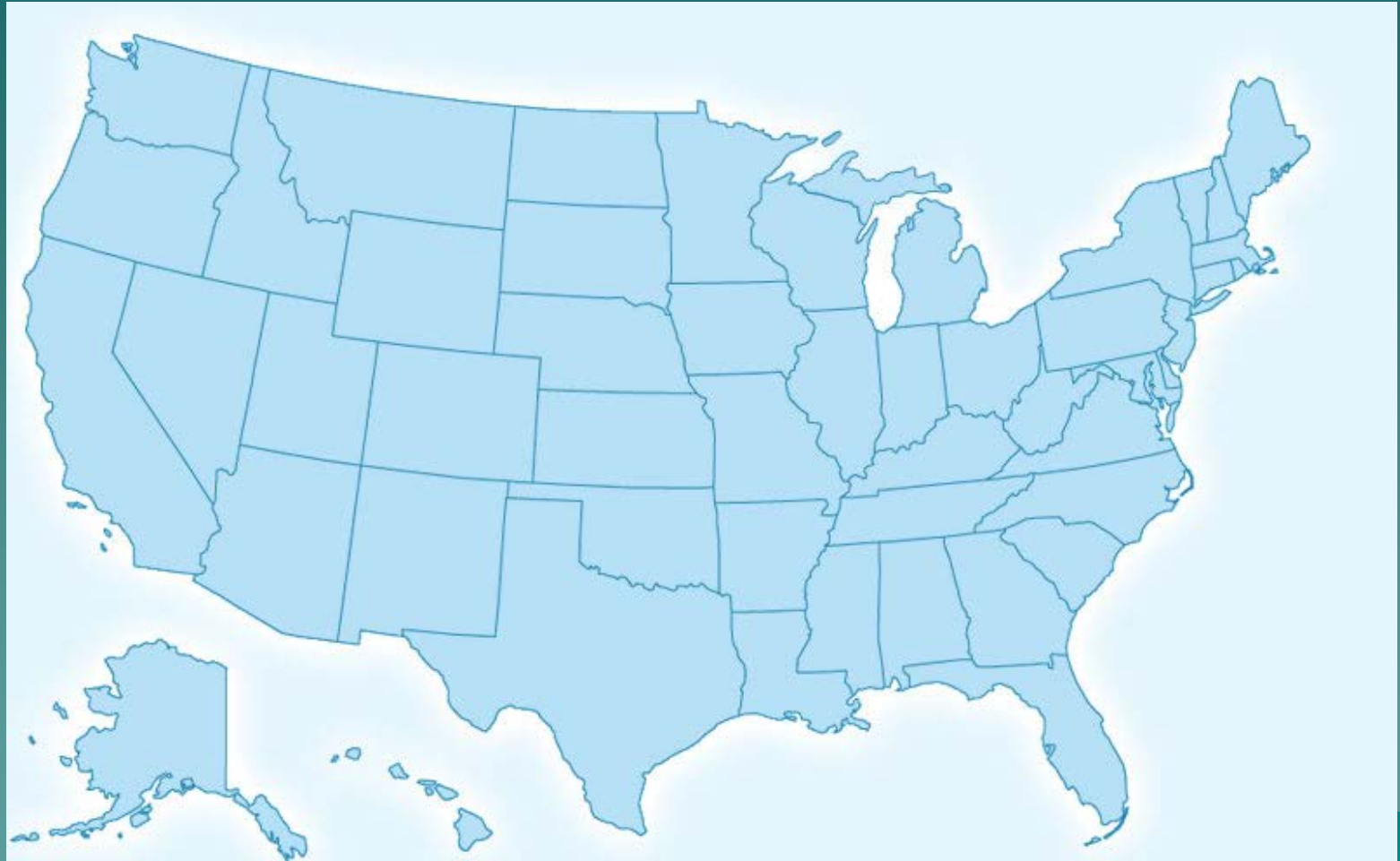
\$5,000 /  
TOURIST



\$50 /  
SALMON

\*Estimate for FY 2011

# Alaska: An Island Economy







# Petroleum Wealth in the Bank (Billion \$)

<b>TOTAL</b>	<b>\$62</b>
Permanent Fund	\$44
CBR (Constitutional Budget Reserve)	\$18
SBR (Statutory Budget Reserve)	
GF (General Fund)	

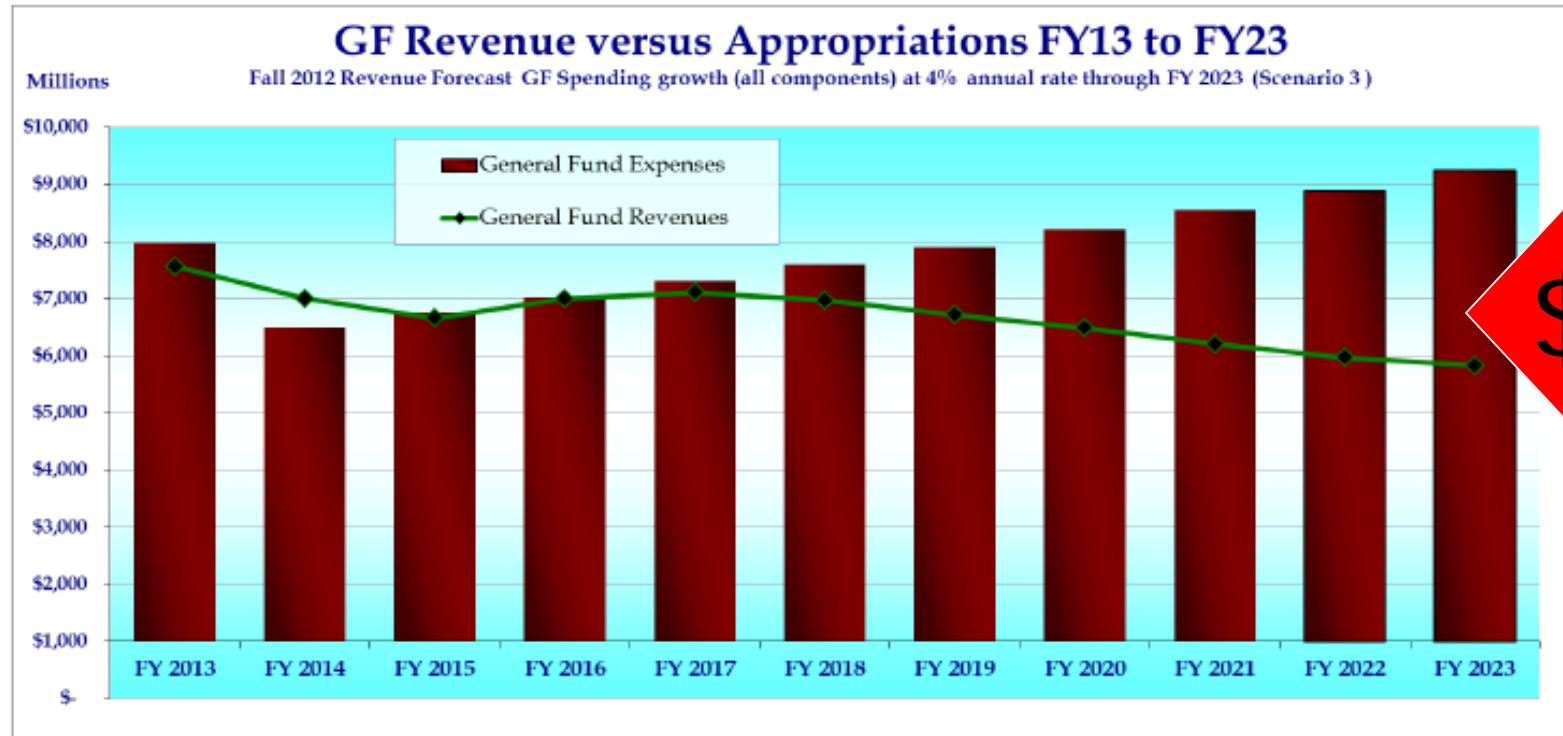
## FY2014 10-Year Plan

Governor's Office of Management and Budget  
Karen J. Rehfeld, Director

FY2014

# 10 Year Fiscal Plan: Judicious Use of Reserves?

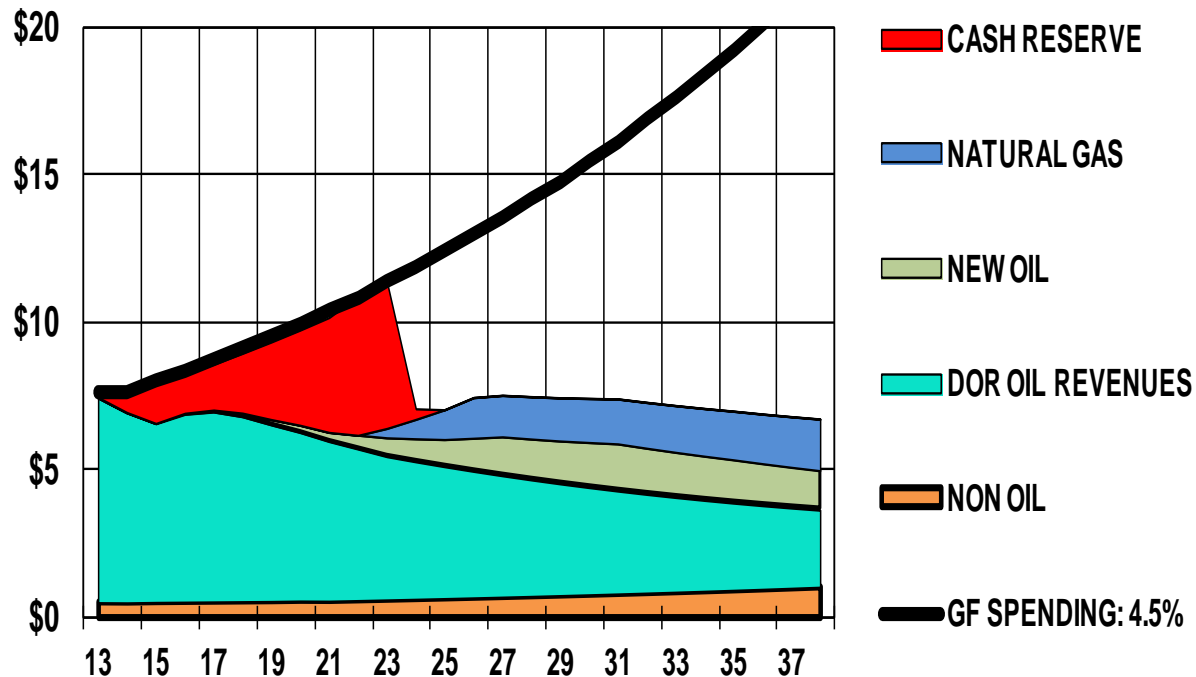
Scenario 3: Governor's FY2014 Budget with 4% Annual GF Expenditure Growth beginning in FY2015



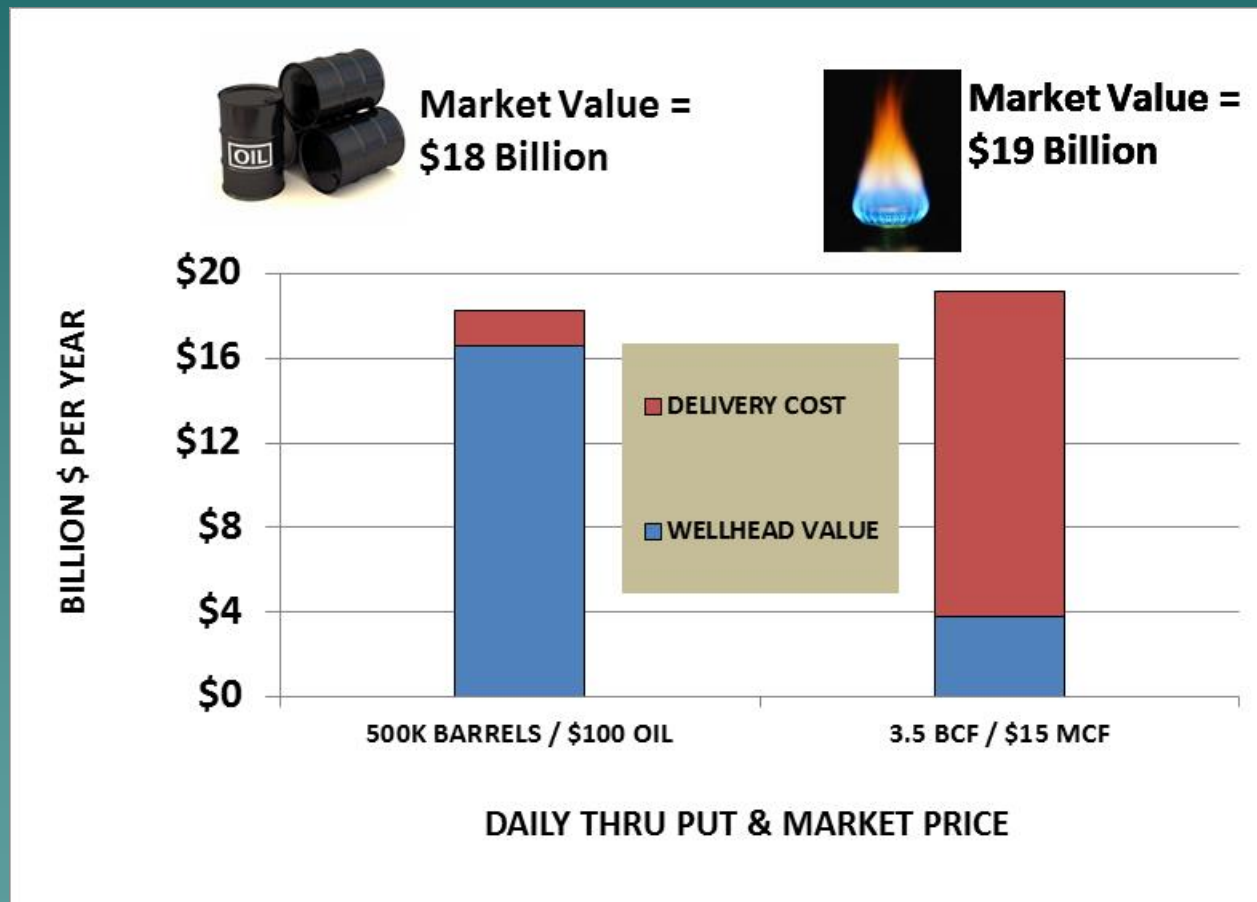
# A Bridge to Nowhere?

(Billion Nominal \$)

## LOOKING BEYOND THE 10-YEAR HORIZON



# Annual Market & Wellhead Value: Comparing Oil and Gas Pipelines



# Future Petroleum Revenue Potential is Limited

	Production Tax	Royalty	Corporate Income Tax	Property Tax
<b>STATE LAND</b>				
Conventional	Y	Y	Y	Y
Conventional Marginal	?	?	Y	Y
Unconventional	?	?	Y	Y
NPRA	Y	1/2 *	Y	Y
ANWR	Y	1/2 * *	Y	Y
OCS	N	N	N	N

\* Shared with local governments.

\*\* Subject to Congressional approval.

# How Can We Sustain a Healthy Level of Public Services in the Future?

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MAXIMUM SUSTAINABLE YIELD  
Management of our biggest asset—  
Petroleum.

- 1) How Big is Our Nest Egg?
- 2) How Should We Manage It?
- 3) How Should We Spend it?



# HOW BIG IS THE NEST EGG?



**TOTAL**

**\$149 Billion**

**In the Bank**

**\$62 Billion**



**In the Ground**

**\$87 Billion**

Known Conventional Oil

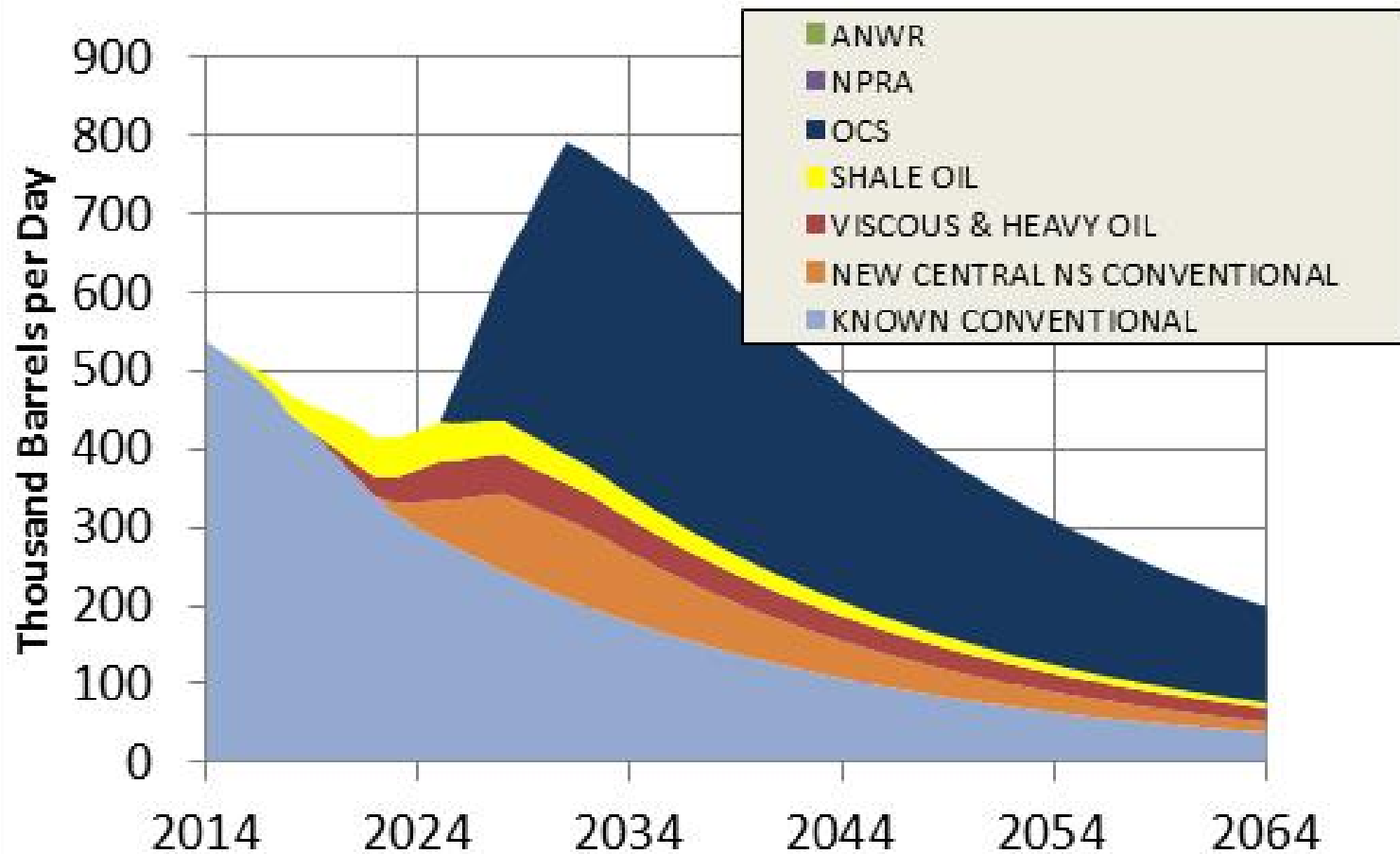
**\$65 Billion**

Other Oil and Gas

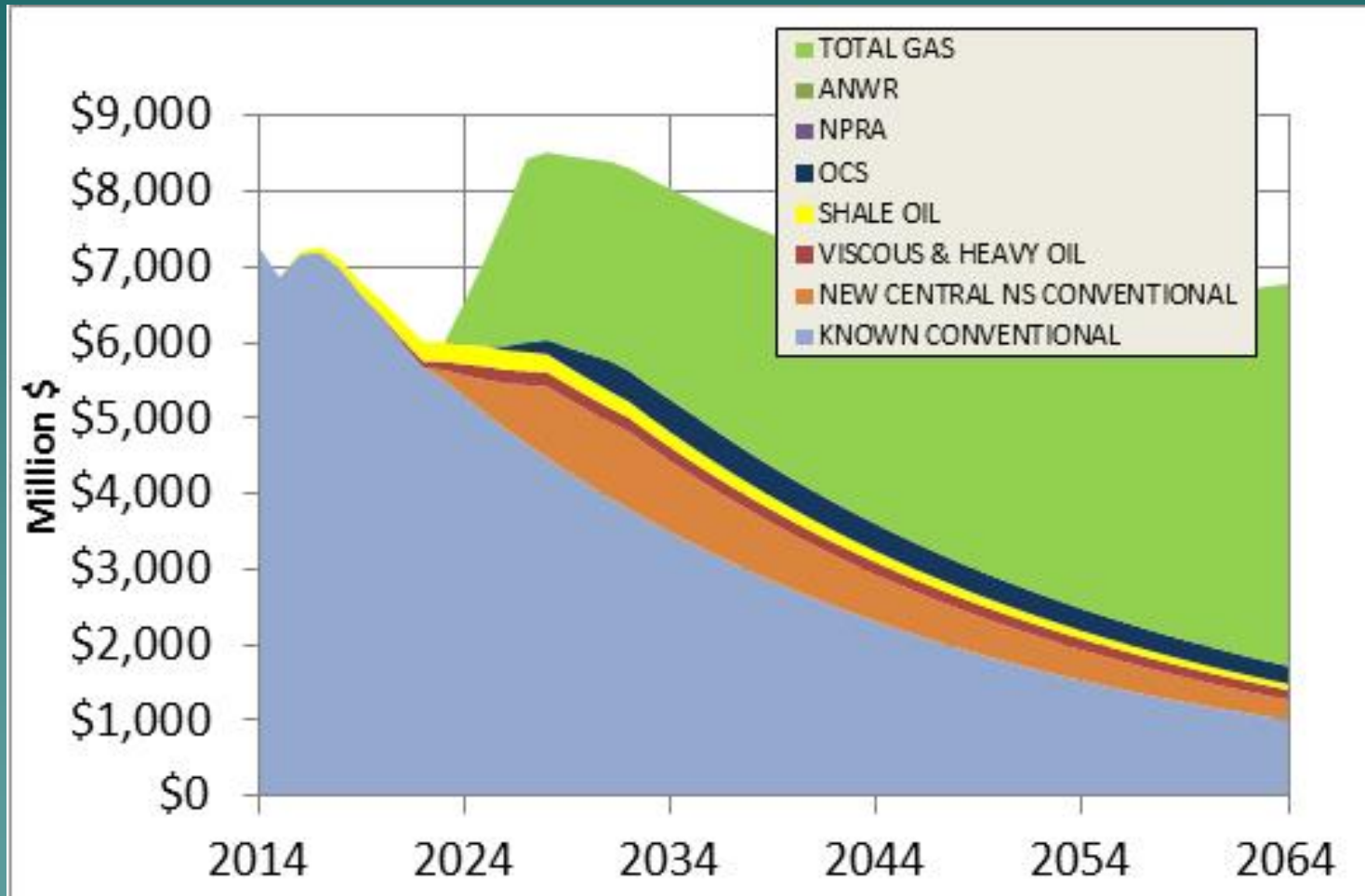
**\$22 Billion**

**\$200,000 for each current resident**

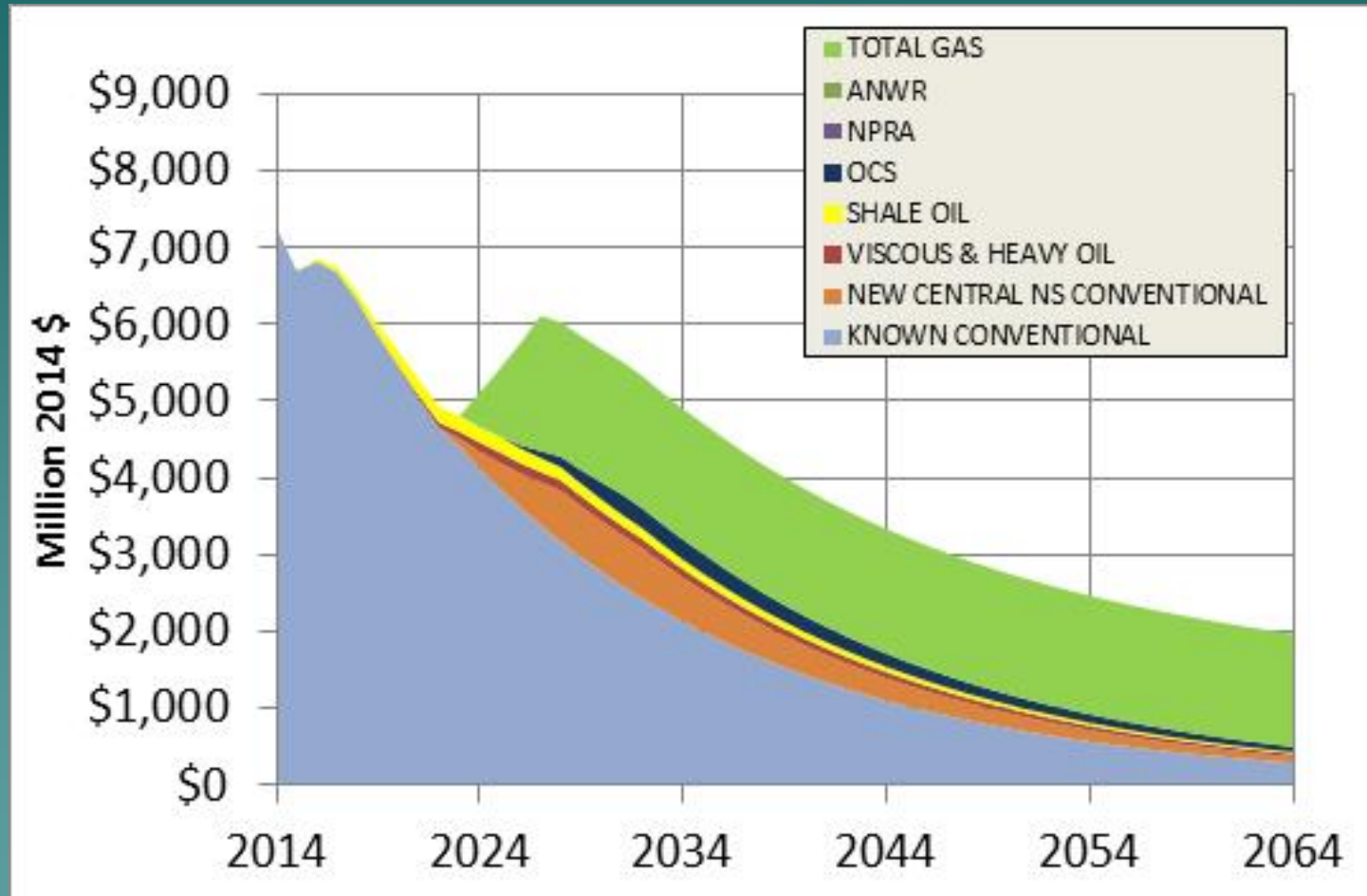
# Projected Oil Production



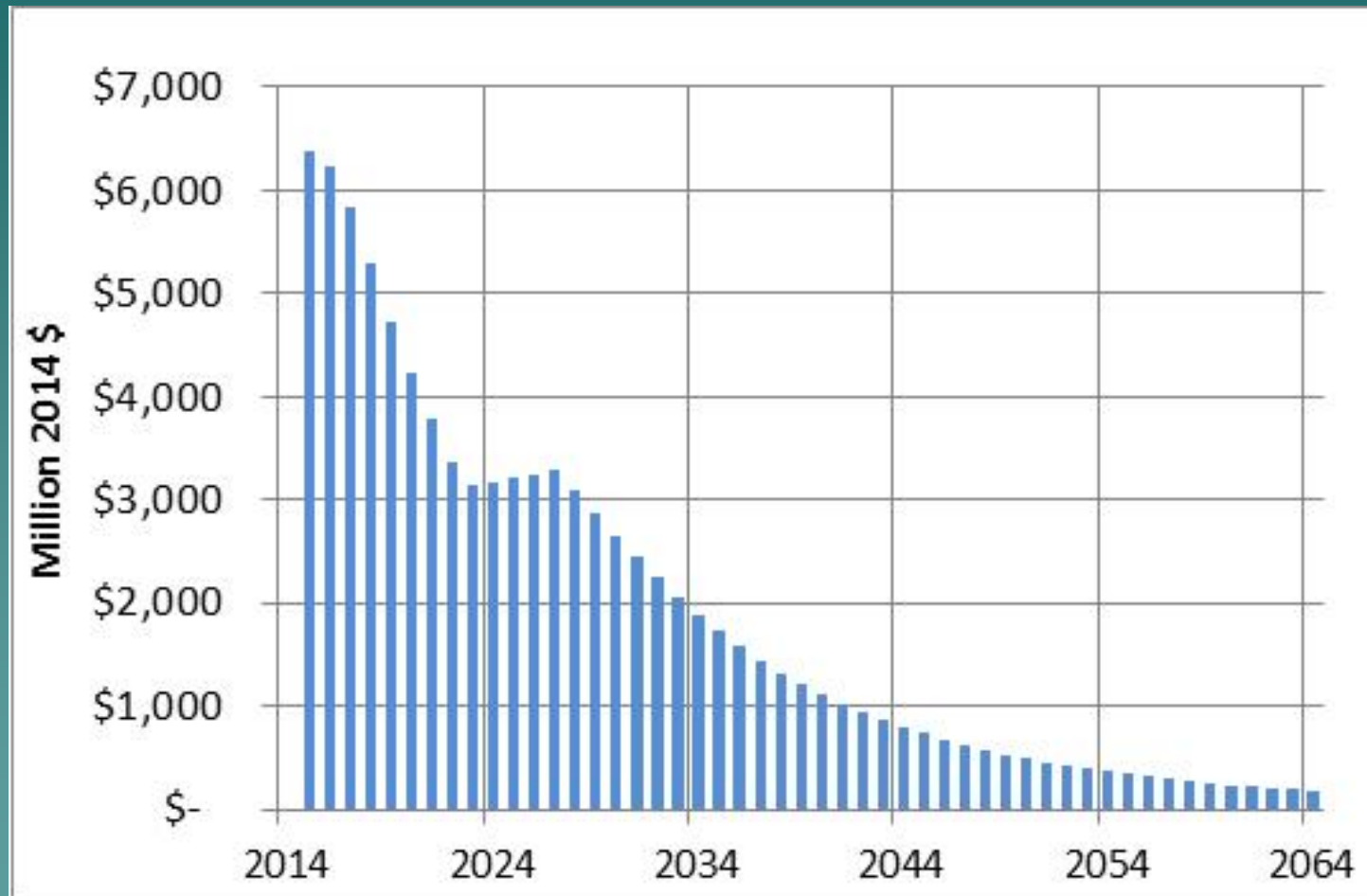
# Projected Petroleum Revenue



# Projected Real Petroleum Revenue



# Net Present Value of Projected Petroleum Revenue



# HOW SHOULD WE MANAGE THE NEST EGG (Asset, Endowment)?

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For Maximum Long  
Run Return



# HOW MUCH OF THE NEST EGG SHOULD WE SPEND?

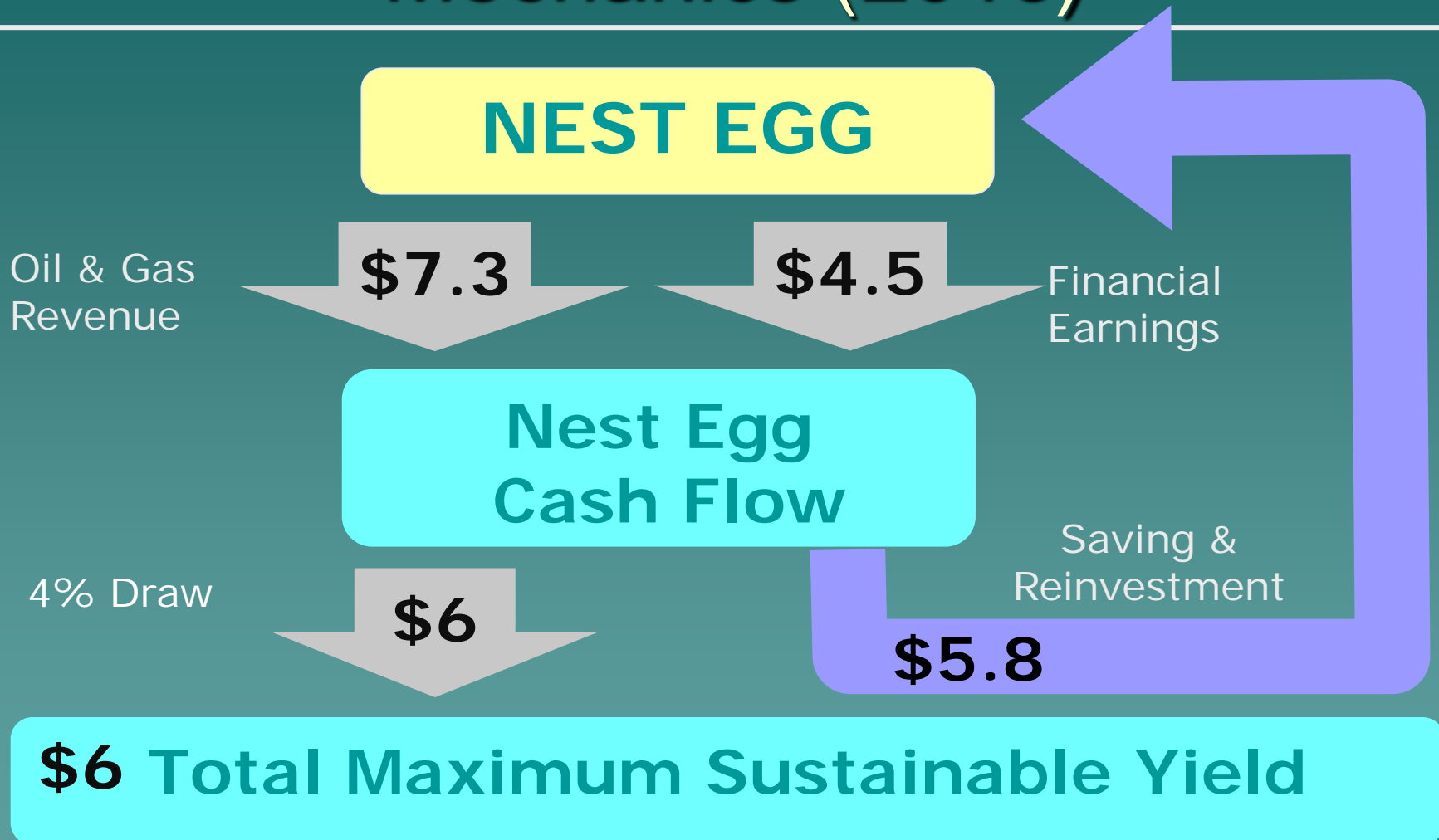
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DRAW each year at a rate that will  
conserve the value of the Nest  
Egg for future generations of  
Alaskans—the Maximum  
Sustainable Yield.

# Maximum Sustainable Yield: Calculation

Nest Egg	\$149 Billion
Investment Return (After Inflation)	5%
Population Growth	1%
MSY Draw Rate	4% = (5%-1%)
<b>MSY Draw</b>	<b>\$6 Billion = (\$149*4%)</b>

# Maximum Sustainable Yield: Mechanics (2013)



# Maximum Sustainable Yield: Disposition (2013)

**Total Maximum Sustainable Yield \$6**

**\$1**

**Permanent Fund  
Dividend**

**\$5**

**General  
Fund**

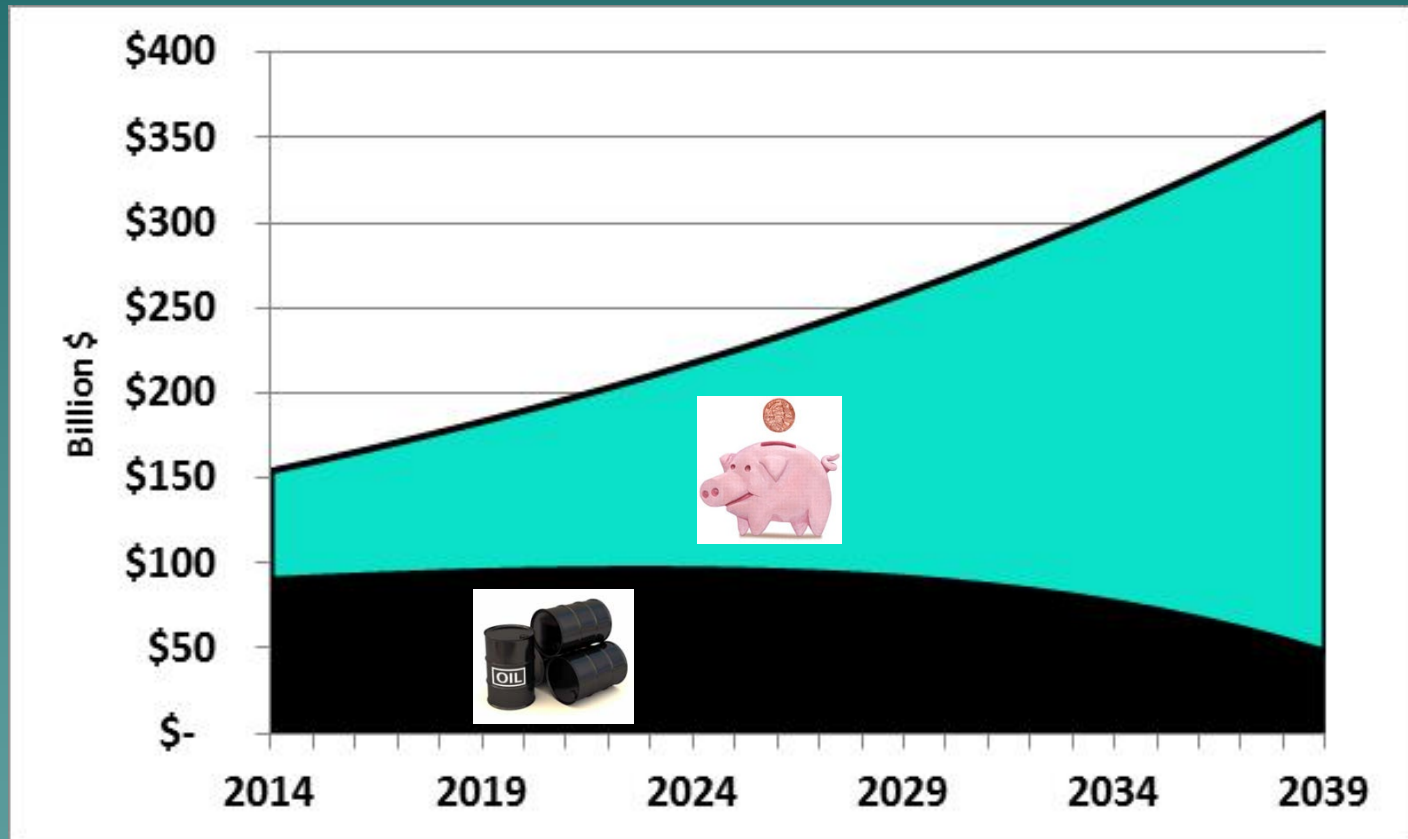
**GF Non  
Petroleum  
Revenues**

**\$5**

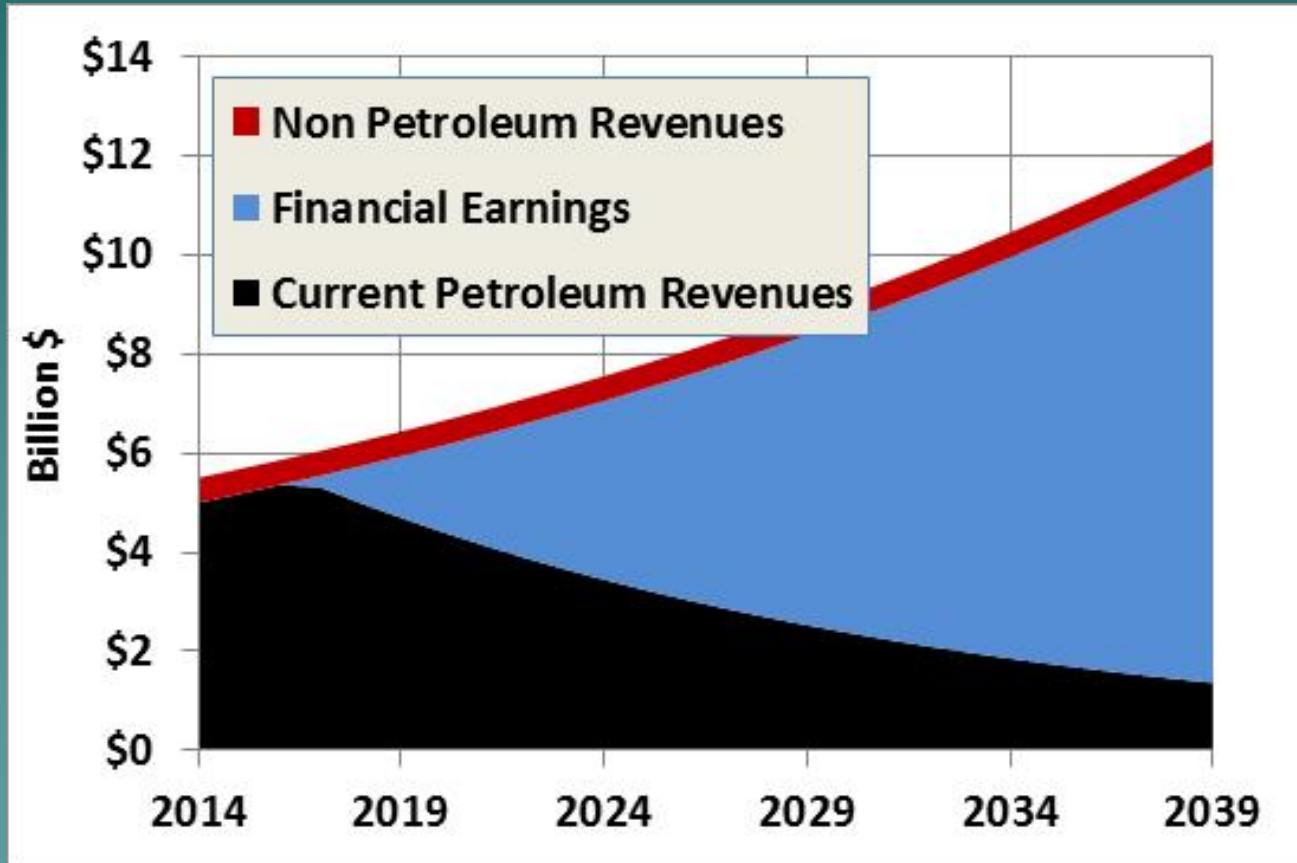
**\$.5**

**\$5.5      GENERAL FUND  
MAXIMUM SUSTAINABLE YIELD**

# Maximum Sustainable Yield: Nest Egg Growth



# Maximum Sustainable Yield: General Fund Growth



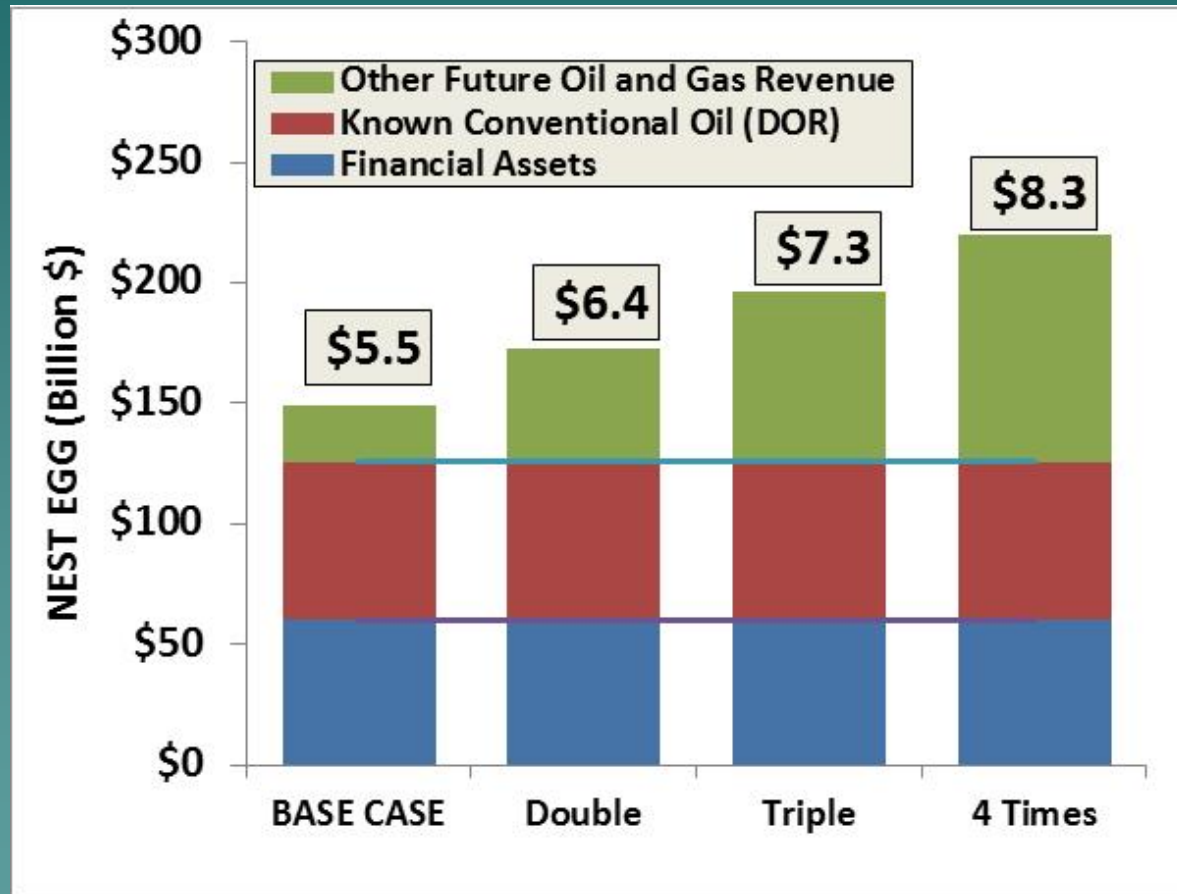


# FY 13 & 14 General Fund Spending (Billion \$)

<b>GF Actual Spend</b>	<b>\$7.6</b>	<b>\$6.8*</b>
GF Maximum Sustainable Yield Draw	\$5.5	\$5.5
<b>GF Over Spend</b>	<b>\$2.1</b>	<b>\$1.3</b>
<b>Fiscal Burden &amp; Asset Erosion</b>		

\* Sustainable with income and sales taxes.

# Nest Egg & MSY Sensitivity: Other Future Oil and Gas Revenue



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